Resource Oriented Service Ideation: Integrating S-D Logic with Service Design Techniques.

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Abstract

Although the importance of Service-Dominant (S-D) logic is recently recognized among service designers, they still have barriers in applying the perspective to design practices due to the lack of appropriate tools and techniques to operationalize its conceptual strengths. To advance the integration of S-D logic into service design, this paper introduces a resource-oriented service design approach that focuses on representing and reconfiguring value co-creation. In particular, a service ideation technique called ROSI, along with two representation tools named resource integration map and resource availability table, is developed based on the concepts of resource integration (Vargo & Lusch, 2008) and value constellation (Norman & Ramirez, 1993), and the characterization of discontinuous service innovation from the perspective of S-D logic (Michel, Brown, & Gallen, 2008). This paper then shows how the introduced approach facilitates the ideation of innovative services and also discusses its future research possibilities.

KEYWORDS: S-D logic, resource integration, co-creation, discontinuous innovation

Introduction

Many of recent discussions in service design start to claim that it is no longer meaningful to distinguish products and services (Kimbell, 2011). This recognition also corresponds to the fact that many digital products these days are integrated with some software applications and communication services whereas more and more services are becoming to be supported by various goods and physical objects. When service designers do not care much the difference between products and service, however, what the word service exactly means to them? One promising answer for this question is the definition of service in Service-Dominant logic (S-D logic) that service is "applications of competences (knowledge and skills), through deeds, processes, and performances, for the benefit of another entity or the entity itself" (Vargo &

Lusch, 2008, p. 26). In the perspective of S-D logic, service in the singular is seen as an activity to participate in the customer's value creation, being distinguished from services in the plural that are regarded as a special kind of goods characterised by IHIP conditions (Zeithaml, Parasuraman, & Berry, 1985). From the viewpoint of a customer, in this framework, products and services provided by firms and other parties do not carry values but work as resources for creating values for achieving ones life goals. When creating these values in use, the customer applies ones own knowledge and skills to integrate these with resources obtained from others including the provider of products and services. Thus, a customer is always a co-creator of values and also an integrator of competences and resources. Such views of service, resources, and a customer in S-D logic are not just congruent with the user centricity of service design, but also are expected to provide service designers with a strategic perspective to improve and innovate service systems and experiences.

Some researches in service design already point at the possibility and importance of incorporating the perspective of S-D logic into service design by analyzing the conceptual commonalities between two fields (Edman, 2010; 2011), and also by shifting the role of service design form designing of services to designing for service (Kimbell, 2009; 2010; 2011). Although these researches promoted the understanding of S-D logic among service designers and succeeded to attract their attention to related marketing studies and service researches, service designers still have difficulties to apply the perspective of S-D logic to design practices. One of the barriers to such a practical application of S-D logic is the lack of technique to visualize resources and resource integrations. Moreover, it is necessary for designers for service to translate the conceptual and analytical framework of S-D logic into operational and synthetic processes. Regarding the former, Ng (2013) introduces an approach to represent a context of a customer to integrate various resources in the form of a value constellation map based on the notions of value stars and value constellation developed originally by Normann and Ramirez (1993). However, this approach has not yet gathered sufficient attention from service designers and there is some ambiguity in the definition of value constellation even among service scholars. Pertaining to the latter, Patricio, Fisk, Cunha and Constantine (2011) develops the technique of Customer Value Constellation to design service concepts for integrating these in a systematic manner with the design of service systems and encounters. Although this technique facilitates the visualization of distributed and synthetic aspects of customer value creation representing the customer's integration of service offerings from a various providers, it does incorporate the concept of resources defined in S-D logic. As a result of this, it fails to provide service designers with means to treat a customer's resources such as knowledge and skills, which are essential to realize customer-provider value co-creation. Resource oriented conceptualization of value co-creation is adopted in Michel, Brown and Gallen (2008) for developing an analytical framework of discontinuous service innovation based on the perspective of S-D logic. Their framework explains the process of service innovation as a re-configuration of resource integration between a customer and a firm and also among a number of stakeholders. While this research puts emphasis on its analytical purpose, it is expected for the framework to be further developed as an operational technique being applicable to a design project for service innovation.

To advance the application of the perspective of S-D logic to service design practice, this paper aims at exploring the possibility of a resource oriented service design approach by developing tools and a technique to integrate the notions and frameworks of S-D Logic into service design methodology. In the following chapters, two tools called resource integration map and resource availability table are introduced in turn. Whereas a resource integration

map represents a customer's context to achieve an outcome by integrating various resources, a resource availability table is used for analyzing the availability of resources required for the desirable outcome. Then a service ideation technique called ROSI, which is developed based on the framework of discontinuous innovation introduced by Michel et al. (2008), is explained with an example of its application to a service design project. Finally, this paper discusses some future research possibilities.

Resource Integration Map

Richard Normann, a Swedish service researcher, introduced the concepts of value stars (Wikstrom & Normann, 1994; Norman & Ramirez, 1994) and value constellations (Normann, 2001). Whereas value stars denote various inputs (resources) into a customer, a value constellation is understood as a network of values in use realized by the exchange and integration of resources among a number of actors. Although these concepts influence significantly the development of S-D logic, they do not have clear definitions thus limiting their practical applications. Moreover, understanding of value in use sometimes requires complex phenomenological interpretation (Vargo & Lusch, 2008) being difficult to be depicted in a visual format. Instead of looking at a value itself, it is more useful for service designers to put emphasis on resources and give them explicit representations to promote a clear understanding of value co-creation and also a better ideation of services.

It is of importance to note that S-D logic views resources as anything an actor can draw on for support, where an actor means a firm, customer, or other stakeholder (Vargo & Lusch, 2004). Resources can be internal to actors and under their control or external to actors but capable of being drawn on for support. S-D logic also distinguishes operand resources and operant resources (Constantin & Lusch, 1994: Vargo & Lusch, 2004). Operand resources are typically tangible resources such as natural resources that require some action on them to create value. Operant resources are typically intangible resources such as knowledge and skills that are capable of acting on operand resources to create value. In the framework of S-D logic, actors, including customers, are seen as resource integrates who integrate operand and operant resources made available to them by various providers, with their own personal resources to co-create value. As is expressed in the ninth foundational premise (FP9) of S-D logic, all social and economic actors are resource integrators. It is also important to recognize that any resource does not exist by itself but becomes a resource in relation to other resources depending on the customer's context of their use (Vargo & Lusch, 2008).

A *resource integration map* is introduced as a visual representation of the customer's resource integration, also known as value stars. A resource integration map is drawn for an actual or possible context in which a customer achieves a certain outcome integrating some internal and external resources. Here the customer can be an individual, a group of individuals, or an organization. The idea of a resource integration map is inspired by the representation of a value constellation map and the conceptualization of a customer's context that are elaborated by Ng (2013). In particular, the composition of a resource integration map follows its formalization of the customer's context consisting of customer's outcome, skills, practices, and provider's offerings (Ng 2013). However, while a value constellation map does not depict explicitly the roles of customer's outcome and skills being essential for value co-creation, these are included in a representation of resource integration map. Moreover, a resource integration map does not refer to service providers, because a resource integration

map is generated for exploring the possibilities of discontinuous innovation that may require new or a new set of stakeholders.

To make a resource integration map, designers can use information collected from customer research with paying special attention to resources obtained and used by the customer. A resource integration map consists of the following inter-related five components (Figure1).

1) Customer

The first component of a resource integration map is a customer (or a persona of the customer). It includes some basic information about the customer persona such as name, gender, age, lifestyle and also background knowledge related to his/her outcome to achieve.

2) Outcome

Customer's outcome is a goal or objective (or a set of goals and objectives) the customer wants to achieve by acting on the resources that he or she owns or acquired from other stakeholders. A customer's outcome can be understood as a concept being similar to a persona's jobs-to-be-done (Chrsitensen & Raynor, 2003).

3) Activities

Activities are a set of actions or behaviors of a customer utilizing resources for achieving ones outcome.

4) Competences

Competences are a customer's own knowledge and skills (i.e., operant resources) needed for acting on ones acquired resources effectively to accomplish a desired outcome.

5) Resources (outsourced resources)

Resources are objects, performances, knowledge and information that a customer outsources from other stakeholders to utilize for realizing ones outcome.
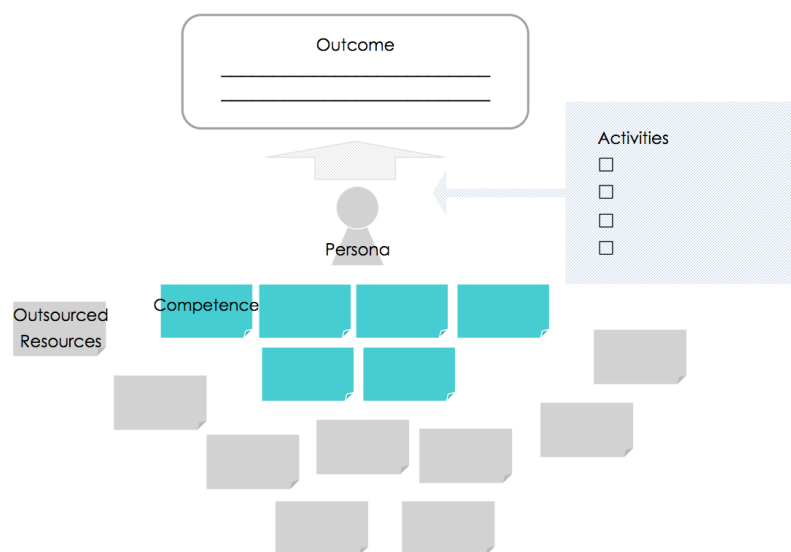

Figure 1: A schematic representation of a resource integration map

Resource Availability Table

The strength of resource integration maps becomes obvious when they are applied to ideate new services. They support the process of ideating new services with paying attention to the external and internal resources required for a target customer to achieve a desired outcome. For example, let us think about a design project whose goal is to generate a new service targeting a number of average routine customers based on research findings on some advanced lead user behaviours. Designers in this project first produce two resource integration maps, one for the lead user and the other for a typical routine user depicting for each the five components of the map. Then the designers compare those two maps to find differences in the resources used by these two kinds of users. To do such an analysis in a structured manner, we developed a tool named a *resource availability table*. A resource availability table is a matrix of 2 rows and 2 columns (Table 1). The rows distinguish the user's competences (operant resources) such as knowledge and skills (the upper) from other outsourced resources (the lower) while the columns distinguish available resources (the left) from unavailable resources (the right). The upper left box labelled as **I** in Table 1 is for filling in the competences that both the lead user and the target routine user developed well. The upper right box labeled as **II** in Table 1 is for filling in the competences that the lead user developed well while the routine user lacks. The lower left box labeled as **III** in Table 1 is the entry for the resources that are easy to obtain both for the lead and routine users whereas the lower right box labeled as **IV** in Table 1 is the entry for the resources that are difficult to obtain for the routine user. A resource availability table organized as such thus facilitates designers to find opportunities for new services by orienting their attention to resources that are required to achieve a desirable outcome but not easily obtained by the targeted user. Indeed, an appropriate size of a resource availability table put on a wall works as an effective platform for brainstorming in the ideation stage of service design.

	Developed / Easy to obtain	Not developed / Difficult to obtain
Competences	I	II
Resources	III	IV

Table1: A resource availability table

Discontinuous Service Innovation and the ROSI Technique

Michel, Brown & Gallen (2008) argue that discontinuous innovation according to S-D logic perspective can arise from changes in the firm's value creation. According to the authors, the firm's value creation is changed in three possible categories:

1) knowledge is embedded in objects to be transferred from the firm to the customers,
2) resources are integrated or divided within the firm and in relation to customers,

3) knowledge and resources are distributed among a number of parties involved in the value-co-creation.

Although this framework of discontinuous innovation was developed mainly for analytical purposes, it can be used as a guideline for the ideation of new services or service innovation in a service design project. To realize such a possibility, we introduce an ideation technique called *Resource-Oriented Service Ideation* (ROSI). ROSI integrates the framework developed by Michel et al. (2008) with a resource availability table such that the three possible categories of changes in the firm's value creation are applied to orient the design opportunities found in the resource availability table. Regarding the first innovation category mentioned above, knowledge is also transferred through education and training in addition to the transfer by objects such as manufactured products (Michel et al., 2008). Therefore, a discontinuous innovation based on some new education or training service is included in the first category of the ROSI technique.

An actual ideation session using ROSI technique proceeds by asking a question that relates one of the three possible categories of discontinuous innovation with the competences or resources listed in an appropriate box of the resource availability table. For example, regarding some undeveloped competence of a targeted user listed in the box **II** in Table 1, designers may ask how the firm is able to empower the user either by producing a new product embedded with the lacking competence or by providing the user with a training opportunity to develop ones competence (Category 1). Also when the designers focus on some resources listed in the box **III** or **IV** in Table 1, they may ask if it is possible for the firm to integrate more of those resources to relieve the targeted user of integrating those by themselves (Category 2). On the contrary, designers may also think of the possibility for the firm to let the user take more active and engaging role in integrating his/her developed competences as well as additional resources listed in the box **I** and the box **IV** respectively (Category 2). The application of the third category of discontinuous innovation in the ROSI technique is explained in the next chapter.

Appling ROSI to a Design Project

Let us now think of a design project for a food delivery company that has a competitive strength in making healthy recipes by establishing a network of doctors, nutritionists and cooks over the world. The goal of this project is to generate a new innovative service for the company to support people's healthy dietary lifestyle using the ROSI technique. Suppose the design team has chosen the strategy to develop ideas for the new service based on a research on some skilled person (a lead user persona) who developed knowledge about health in addition to techniques for cooking healthy foods. This skilled person also enjoys studying the relationship between health and food to create ones own recipes based on the knowledge. The person is also always looking forward to have a physical checkup to evaluate his/her daily effort to maintain and improve own health. The new service is planned to target at an average unskilled person (a routine user persona) who does not have much knowledge about healthy foods feeling difficulty to maintain ones healthy dietary life. Analyzing the research results on the skilled and the unskilled person, the design team generates resource integration maps for these personas and then produces a resource availability table (Table 2).

	Developed / Easy to obtain		Not developed / Difficult to obtain		
Competences			Effort to improve ones health	Concern about disease prevention	Skills to arrange recipes to be more nutritious
			Curiosity to learn about body and and nutrition	Persistence in health maintenance	Spirit of challenge to try new health management methods
Resources	Fresh foods and ingredients to improve health	Opportunity of yearly health check	Frequent health check to evaluate the progress in health condition	Opinion of an expert to evaluate health condition	Episodes of illness of others to keep health consciousness
	Inexpensive food to continue healthy diet	Home health-check devices	Knowledge to learn about body and health	News and trends in health management	Recommends from others to try healthy foods

Table 2: An example resource availability table

Using this resource availability table, the design team now starts an ideation session using the ROSI technique. First, they look at some required competence that the targeted persona lacks such as knowledge on healthy nutrition, strength to sustain healthy lifestyle, and an ability to customize a recipe to meet ones health condition. The team then generates some ideas for a new product or a new training service for empowering the targeted persona. For example, they may come up with an idea of a new "healthy dietary gym" that is a training facility for the targeted personas to exercise healthy cooking and eating under the supervision of nutritionists and cooks.

Secondly, the design team pays attention to the resources hardly obtained by the targeted persona, which include an opportunity to examine ones health condition in a causal manner without going to a hospital and also a chance to have some advices on nutritious diet based on the result of health examination. Such an investigation promotes the team to develop an additional idea that the visitors to the healthy dietary gym are free to take self-service physical examinations to receive, based on the examinations, some quick advices from a doctor as well as appropriate recipes from a nutritionist.

Thirdly, the team broadens its perspective of ideation resorting to the third category of discontinuous innovation: knowledge and resources are distributed among a number of parties involved in the value-co-creation. To apply the category to the resource availability table, the team needs to ask what other resources could be added in the table to further empower or enrich the experience of the targeted user, and also ask who could provide such resources for what benefit. For example, the users of the healthy dietary gym may want some facilities for physical exercises in addition to those for learning healthy cooking. Since the healthy dietary gym is supposed to have a large number of customers who are interested in their health conditions and also may have developed a rich database of their personal health records, it is possible for the gym to collaborate with a sports gym using those as resources for establishing a joint service. For example, the customers of this joint service would be provided with some integrated fitness and dietary programs.

Figure 2 shows a possible diagram for representing the three ideas mentioned above as an integrated service system.
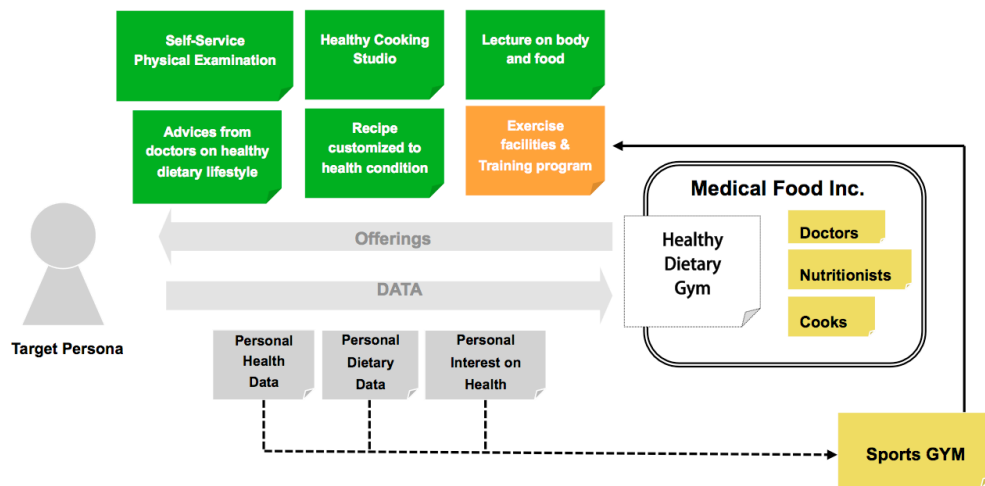
Figure 2: A service system map

Discussion

We introduced a new ideation technique called ROSI as well as two representation tools called a resource integration map and a resource availability table by integrating resource-oriented perspectives of S-D logic into service design methodology. In particular, ROSI provides service designers with a strategic ideation technique for innovative services or discontinuous service innovation, which has been missing so far in the menu of popular service design tools. Besides such a practical benefit, the resource oriented service design approach promotes among service designers further understanding of the notion of co-creation of values that is essential for S-D logic. Although some researchers clarify the difference between co-design often practiced in a service design project and co-creation conceptualized in S-D logic (Edman, 2011; Kimbell, 2009), these are sometimes misunderstood or confused in service design discourse. Such a misunderstanding or confusion becomes a conceptual barrier to the productive exchanging of knowledge and ideas between marketing studies and service design. The ROSI technique succeeds in helping designers for services to visualize, understand, and explore the possible constellations of resource integration from the perspective of a customer who creates values in collaboration with various resource providers. Such a visualization and operationalization of the concept of value co-creation made possible by the ROSI technique has an advantage over existing methods and tools to represent value constellations for integrating S-D logic into service design. Moreover, for marketing research, the technique of ROSI encourages the applications of the conceptual framework of S-D logic in design contexts supporting its practical strength and further conceptual development.

There are several topics to be dealt with in the future research for further development of the resource oriented design approach. First, while the resource availability table was generated based on the research on a lead user in the example explained in this paper, it is not always possible to find an appropriate lead user whose behavior shows a desirable outcome and resources for the targeted user of a design project. It is therefore necessary to

develop a technique or apply some other method to define a desirable outcome and required resources for the targeted customer besides the lead user method. Secondly, the current ROSI technique considers only the dimension of the change in firm's value creation for the ideation of services. It could also incorporate the dimension of change in the customer's role, which is explained along with the firm's dimension in Michel et al. (2008). Moreover, regarding the firm's dimension, we could ask if there is any other category of change in the firm's value creation for a discontinuous innovation in addition to the three ways of change introduced in Michel et al. (2008). Finally, it is worth studying the relationship and also some possible integration between the resource-oriented approach and other popular service design techniques such as customer journey mapping, service blueprinting, and stakeholder mapping. One of such possibilities is to include the explicit description of competences and resources in customer journey maps and stakeholder maps. The systematic integration of value constellation and service blueprinting developed as Multilevel Service Design method by Patricio et al. (2011) seems to offer a good clue as to explore in the direction of future research.

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